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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,331	08/29/2003	Theng Tee Yeo	05721.0003.NPUS00	1645
2352	7590	01/20/2006	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			LE, NHAN T	
			ART UNIT	PAPER NUMBER
			2685	
DATE MAILED: 01/20/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/652,331	Applicant(s) YEO ET AL.	
	Examiner Nhan T. Le	Art Unit 2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/02/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 5, 6, 10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US 6,631,170) in view of Greaves (US 5,408,529).

As to claim 1, Gu teaches a signal processing circuit arranged to be used in a frequency modulated signal receiver comprising a complex filter connected to analog to digital conversion means (see fig. 3a, numbers 304, 307, 310, col. 5, lines 30-67, col. 6, lines 1-36). Gu fails to teach the filter comprising first and second complex filter stages and a voltage limiter disposed between the stages. Greaves teaches the filter comprising first and second complex filter stages and a voltage limiter disposed between the stages (see fig. 6, numbers 121, 125, 127, col. 8, lines 36-59, col. 9, lines 34-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Greaves into the system of Gu in order to filter out the signals within the narrow band (as suggested by Greaves col. 8, lines 40-45).

As to claim 2, the combination of Gu and Greaves teaches wherein the first filter stage is arranged to provide gain to a received signal (see Gu col. 5, lines 30-67, col. 6, lines 1-36).

As to claim 5, the combination of Gu and Greaves teaches wherein the second stage comprises at least two complex poles (see Greaves col. 9, lines 34-60).

As to claim 6, the combination of Gu and Greaves teaches amplifier means disposed between the second filter stage and the analog to digital conversion means (see Gu fig. 3a, number 309, col. 5, lines 30-67, col. 6, lines 1-36).

As to claim 10, the combination of Gu and Greaves teaches wherein the analog to digital conversion means comprises a single analog to digital converter (see Gu fig. 3a, number 310, col. 5, lines 30-67, col. 6, lines 1-36).

As to claim 12, the combination of Gu and Greaves teaches wherein circuit elements from the limiter to the analog to digital conversion means are arranged to limit the signal voltage to less than the maximum allowable range of the analog to digital conversion means (see Greaves fig. 6, number 125, col. 8, lines 36-59, col. 9, lines 34-60).

As to claims 13, 14, the combination of Gu and Greaves teaches comprising a mixer, connected to the first filter stage (see Gu fig. 3a, numbers 341, col. 5, lines 30-67, col. 6, lines 1-36), wherein the mixer is connected to the first filter stage via DC decoupling means (see Gu fig. 3a, col. 5, lines 30-67, col. 6, lines 1-36).

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US 6,631,170) in view of Greaves (US 5,408,529) further in view of Ernyei et al (US 4,197,516).

As to claim 3, the combination of Gu and Greaves fails to teach wherein the first

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stage comprises at least three complex poles. Ernyei teaches wherein the filter comprises at least three complex poles (see col. 1, lines 14-21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Ernyei into the system of Gu and Greaves in order to reduce attenuation of in the passband of the filter.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US 6,631,170) in view of Greaves (US 5,408,529) further in view of Ramachandran (US 6,674,999).

As to claim 4, the combination of Gu and Greaves fails to teach wherein the second filter stage is arranged to filter out higher order harmonics of a received signal. Ramachadran teaches wherein the second filter stage is arranged to filter out higher order harmonics of a received signal (see col. 6, lines 40-56). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Rammachadran into the system of Gu and Greaves in order to reduce the out of band noise (as suggested by Ramachadran col. 6, lines 40-56).

4. Claims 7-9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US 6,631,170) in view of Greaves (US 5,408,529) further in view of Van Sinderen (US 6,862,327).

As to claims 7, 8, the combination of Gu and Greaves fails to teach wherein the amplifier means comprises an automatic gain control amplifier having a signal level sensor and a controllable amplifier, wherein the sensor is arranged to control the gain of the amplifier between two gain levels in dependence upon the level of a received signal

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. Van teaches amplifier means comprises an automatic gain control amplifier having a signal level sensor and a controllable amplifier (see fig. 2, 1d1, 1d2, vca1, vca2, col. 4, lines 10-60), wherein the sensor is arranged to control the gain of the amplifier between two gain levels in dependence upon the level of a received signal (see col. 4, lines 10-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Van into the system of Gu and Greaves in order to stabilize the gain setting (as suggested by Van col. 1, lines 39-41).

As to claim 9, the combination of Gu, Greaves and Van teaches wherein the sensor has hysteresis (see Van col. 4, lines 10-60).

As to claim 11, the combination of Gu, Greaves and Van teaches wherein the output from the second filter stage comprises two signals in phase quadrature, only one of which is input to the analog to digital converter means (see Van col. 4, lines 10-60).

5. Claims 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu (US 6,631,170) in view of Greaves (US 5,408,529) further in view of Karasudani (US 6,861,910).

As to claims 15, 16, the combination of Gu and Greaves fails to teach wherein the circuit is arranged to be used in a Bluetooth receiver and FM receiver. Karasudani teaches the receiver wherein the receiver is arranged to be used in a Bluetooth receiver and FM receiver (see col. 6, lines 28-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Karasudani into the system of Gu and Greaves in order to prevent the signal noises in the receiver.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Le whose telephone number is 571-272-7892. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

N. Le
Nhan Le

Nguyen Vo
1-18-2006

**NGUYENT.VO
PRIMARY EXAMINER**